

# Pulmonary Tuberculosis Disease: Prevention Behavior in Makassar City

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## ABSTRACT

The problem of pulmonary tuberculosis in the world and in Indonesia is very worrying due to the high mortality and morbidity rate, especially Indonesia is a tropical country so that it can reduce the public health development index. This study aims to determine the effect of knowledge on the behavior of prevention of pulmonary tuberculosis in Makassar City, Indonesia. The sample referred to in this study is that some of the people who have suffered pulmonary disease and who do not suffer from pulmonary tuberculosis who live in the working area of the Makassar City Health Center are 335 people. The sampling technique uses multi stage random sampling. Data analysis using regression test. The results of the analysis are presented in the form of tables, charts and narratives. The results showed that knowledge of disease source control, knowledge of controlling disease agents, knowledge of increasing endurance had a significant influence on the behavior of prevention of pulmonary tuberculosis in the community ( $p < 0.05$ ).

**Conclusion:** community knowledge can improve the behavior of preventing pulmonary disease in the community.

**Keywords:** *pulmonary tuberculosis, knowledge, behavior, prevention.*

## Introduction

The Government's commitment in reducing tuberculosis cases in Indonesia has issued the Decree of the Minister of Health of the Republic of Indonesia Number: 364/Menkes/SK/V/2009 concerning guidelines for the prevention of tuberculosis which refers to the Directly Observed Treatment Short-course (DOTS) strategy and is implemented in all regions of Indonesia. The DOTS strategy consists of 5 key components, namely: 1) Political commitment, with increasing and continuing funding. 2) Case finding through quality microscopic examination of phlegm. 3) Standard treatment, with supervision and support for patients. 4) Effective management system and availability of antituberculosis drugs. 5) Record and reporting monitoring system that

is able to provide an assessment of the results of patient treatment and program performance. But the problem of tuberculosis in Indonesia is still a serious problem because the case is still high and attacks all age groups<sup>1,2</sup>.

The incidence of tuberculosis cases with acidic (+) bacilli in South Sulawesi Province (2013) reported a total of 8,902 cases in the male population of 5,259 cases (59.08%) and in female sex 3,643 (40,92 %). The Makassar City Health Office's Disease Prevention and Health Improvement Field (2014), the number of new patients with pulmonary tuberculosis TB (+) in 2013 was 72.44% (found 1,811 patients out of 2,500 targets), this number increased from 2012 with 1,324 patients out of 1,641 targets. When compared to the 2013 target of 70%, the achievement level exceeds the target with a achievement percentage of 72.44%<sup>3,5,8</sup>.

Research results related to the above interactions include Media Y reporting that the people of Padang Panjang City have a relatively good level of knowledge about tuberculosis, but some still think that the causes of pulmonary tuberculosis are related to things that are unseen and because offspring; public perception that the disease that is dialysis is a normal cough, so that it

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is associated with a lack of caring attitude towards the effects of pulmonary tuberculosis; and the behavior and awareness of some people to check phlegm and use health care facilities is still lacking. States that health behavior (health behavior) is a person's response to stimuli or objects related to health-sickness, illness, and factors that affect health-sickness (health) such as the environment, food, drink, and service health. In other words, health behavior is all activities or activities of a person that can be observed (observable) or that cannot be observed (unobservable) related to the maintenance and improvement of health<sup>4,6,7</sup>. Based on the explanation above, the objectives to be achieved from this study are a description of behavior on prevention of lung tuberculosis in Makassar City<sup>9,11,12</sup>, knowledge of controlling disease sources, controlling disease agents, and increasing patient's resistance to tuberculosis prevention behavior and knowledge variables the dominant influence on the behavior of preventing pulmonary disease in the people of Makassar City.

### Material and Method

Based on the research design that will be used, the type of research is an analytical survey. The population referred to in this study are all people who are domiciled in the area of Makassar City, both healthy and sick or suffering from tuberculosis disease that has been diagnosed by a doctor. The sample intended in this study were some of the people who had suffered from tuberculosis and who did not have pulmonary tuberculosis who lived in the working area of the Makassar City Health Center as many as 335

people. Sampling in this study is a multi stage sampling technique that is a method of sampling through stages. There are also techniques as follows:

a. The first stage, using all sub-districts within the city of Makassar, is 14 sub-districts, b. The second stage is to determine the number of samples for each sub-district by comparing the number of cases of pulmonary tuberculosis to the total population of lung tuberculosis Acid Resistant (+) multiplied by the number of samples to be studied (335 subject), c. The third stage, from the sub-district determined by the Puskesmas which has the highest number of cases of pulmonary tuberculosis as a place for collecting data. In this study, the variables to be analyzed consisted of dependent variables, namely lung disease prevention behavior and independent variables, namely knowledge of controlling tuberculosis disease sources, knowledge of controlling tuberculosis disease agents and knowledge of increasing body resistance to tuberculosis disease. The analysis technique in this study, used is a simple regression test and multiple regression at an error rate of 5%.

### Findings

**Multivariate Analysis:** This analysis aims to determine the effect of Knowledge Source Disease Control variables, Knowledge Variables for Disease Control Agents and Knowledge of Increasing Body Resilience variables on the Behavior Prevention of Tuberculosis Transmitted Disease variables in Makassar City by using multiple regression test analysis. The results of the study are as follows:

#### 1. The Effect of Knowledge on the Control of Sickness Sources of Behavior in Lung Tuberculosis Prevention in Makassar City People

**Table 1: Anova Results of the Influence of Knowledge on Sources of Disease, Against Community Behavior of Makassar City in Prevention of Lung Tuberculosis in 2016**

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	94.647	1	94.647	605.094	.000
	Residual	52.087	333	.156		
	Total	146.734	334			
Dependent Variable: behavior						

Table 1. Shows that  $p < 0.05$ , null hypothesis is rejected, and alternative hypotheses are accepted. This means that Knowledge Knowledge of the Resource Sources variable influences the variable of Lung Disease Prevention Behavior in Makassar City community.

## 2. Influence of Knowledge on Agent Control of Disease Against Preventive Pulmonary Disease Behavior in Makassar City Community

**Table 2: Anova Results of the Influence of Knowledge on Agent Control of Diseases Against the Behavior of Makassar City People in Prevention of Lung Tuberculosis in 2016**

	Model	Sum of Squares	df	Mean Square	F	Sig.
2	Regression	63.667	1	63.667	255.226	.000
	Residual	83.068	333	.249		
	Total	146.734	334			
a. Dependent Variable: Behavior						

Table 2. shows that  $p < 0.05$ , null hypothesis is rejected, and alternative hypotheses are accepted. This means that the Knowledge Variables of Pulmonary Tuberculosis Agent Controlling Influence on the variables of the Prevention of Lung Tuberculosis in Makassar City.

## 3. The Effect of Knowledge of Increasing Body Endurance Against the Prevention of Pulmonary Disease Behavior in Makassar City People

**Table 3: Results of the Analysis of the Effect of Knowledge of Increasing Body Endurance Control on Makassar City Community Behavior in the Prevention of Lung Tuberculosis in 2016**

	Model	Sum of Squares	Df	Mean Square	F	Sig.
3	Regression	80.420	1	80.420	403.831	.000 <sup>b</sup>
	Residual	66.314	333	.199		
	Total	146.734	334			
a. Dependent Variable: behavior						

Table 3 shows that  $p < 0.05$ , null hypothesis is rejected, and alternative hypothesis is accepted. This means that the knowledge variable for increasing body endurance has an effect on the variable behavior of preventing pulmonary tuberculosis in Makassar.

## 4. Knowledge of Prevention of Infectious Diseases of Highly Infected Pulmonary Diseases Against the Behavior of the People of Makassar City in the Prevention of Lung Disease.

**Table 4: Results of Analysis of Correlation of Knowledge on Control of Sickness Sources, Knowledge of Control of Disease Agents, and Knowledge of Increasing Body Endurance Against Behavior of Lung Disease Prevention in Makassar City Society**

		Knowledge of Source of Disease Control	Knowledge of Agent Control of Diseases	Knowledge of increasing body endurance
Pearson Correlation	Behavior	.948	.867	.900
Sig. (1-tailed)		.000	.000	.000

Table 4. shows that the effect of Knowledge of Source Disease Control on Prevention of Pulmonary Disease Behavior with a value of  $r = 0.948$ , Effect of Knowledge of Disease Control Agents on Prevention of Pulmonary Disease Behavior with a value of  $r = 0.867$ , and knowledge of increasing body resistance to prevention behavior of tuberculosis Lung with a value of  $r = 0.900$ . Based on the coefficient correlation, it can be concluded that the biggest contribution of influence is Knowledge of Source of Disease Control, followed by Knowledge of Increasing Endurance of the Body, and finally Knowledge of Agent Control of Disease.

## Discussion

**1. The Effect of Knowledge on the Control of Tuberculosis Sources on the Preventive Behavior of Lung Tuberculosis in the City of Makassar:** Based on the results of the research in table 2 above, it can be concluded that the knowledge of controlling the source of tuberculosis disease affects the behavior of tuberculosis prevention in Makassar City community. The results of this study, in line with some of the research results reported include: Hamidi H. (2010), in the results of his research suggesting that there is a relationship between knowledge of pulmonary tuberculosis prevention and the incidence of tuberculosis in children aged 0-14 years of Salatiga City community<sup>13</sup>. Stated that knowledge of drug consumption was related to the compliance of patients taking medicine for pulmonary tuberculosis in the Glugur community in Medan<sup>10,13,14</sup>.

Furthermore reported that there was a correlation between respondents' knowledge and the behavior of preventing lung tuberculosis in the community in the Maleran Medan Waterfall Village<sup>10</sup>.

Based on the description above, it can be concluded that the behavior of preventing tuberculosis of the people of Makassar City is influenced by the knowledge of tuberculosis pulmonary disease prevention from the aspect of controlling the source of the disease. Knowledge of controlling the source of disease is all efforts to control the source of pulmonary tuberculosis that is known by the people of Makassar City so that the community can prevent transmission of pulmonary tuberculosis<sup>15</sup>.

The control knowledge in question is: if the sick community will go to the doctor and at health care facilities such as clinics, health centers and hospitals; Do not sleep in a room with people with pulmonary tuberculosis; know the clinical symptoms of pulmonary tuberculosis; know how to transmit pulmonary tuberculosis<sup>16</sup>; knowing that if treatment is interrupted then pulmonary tuberculosis cannot heal; knowing that pulmonary tuberculosis germs can be turned off using antibacterial both physical and chemical; knowing that the development of pulmonary tuberculosis

germs is related to unhealthy home environment sanitation and so on<sup>17</sup>.

**2. Effect of Knowledge on the Control of Agents of Tuberculosis. Pulmonary Disease Prevention of Pulmonary Disease in Makassar City Community:** The results of the study showed that the Knowledge of Pulmonary Tuberculosis Control Agent Agents had an effect on the Lung Disease Prevention Behavior of the people of Makassar City. The results of this study are also in line with the results of several studies that have been reported, among others: in the results of his research suggesting that there is a relationship between knowledge of tuberculosis prevention and the incidence of tuberculosis in children aged 0-14 Salatiga City<sup>13</sup>. States that knowledge of drug consumption is related to patient compliance with the drug TBc Lung from the Glugur Medan community<sup>14</sup>. Furthermore reported that there was a relationship between respondents' knowledge and the behavior of pulmonary tuberculosis prevention in the Kelurahan Medan Maleran Waterfall<sup>17</sup>. Based on the description above, it can be concluded that the behavior of preventing tuberculosis of the people of Makassar City is influenced by the knowledge of preventing tuberculosis from aspects of controlling the disease agent<sup>3,8,10</sup>.

Knowledge of controlling disease agents is all efforts to control lung tuberculosis agents known by the people of Makassar so that the community can prevent transmission of tuberculosis<sup>6</sup>. The control knowledge in question is: Knowledge of the Makassar city community referred to in this study include the causes of tuberculosis, transmission of tuberculosis, bacterial habitat for tuberculosis disease, how to destroy tuberculosis, germs of tuberculosis and so on<sup>2,7,9</sup>.

**3. Effect of Knowledge on Increasing the Body Resilience of Pulmonary Tuberculosis Against the Prevention of Pulmonary Disease in the People of Makassar City:** The results of table 4 show that Knowledge of Increasing Body Endurance influences the Prevention of Lung Tuberculosis Behavior in Makassar City community. The results of this study are also in line with some of the reported research results,

among others: in his research there is a relationship between knowledge of tuberculosis disease prevention with the incidence of tuberculosis in children aged 0-14 years of Salatiga City community<sup>2,7,11</sup>. States that knowledge of drug consumption is related to patient compliance with the drug TBc Lung from the Glugur Medan community. Furthermore, reported that there was a relationship between the knowledge of respondents and the behavior of prevention of lung disease in the community in the Medan Maleran Waterfall Village<sup>12</sup>.

Based on the description above, it can be concluded that the behavior of prevention of tuberculosis in the people of Makassar City is influenced by the knowledge of preventing tuberculosis from aspects of increasing body resistance to tuberculosis. Knowledge of increasing endurance is an effort to increase the body's resistance to tuberculosis, which is known to the people of Makassar so that the community can prevent transmission of tuberculosis. The knowledge of increasing the body's resistance in question is: protecting themselves from the spread of tuberculosis disease, consuming food, healthy drinks, managing good household waste, the dangers of cigarettes to health, eradicating disease vectors, healthy environmental sanitation, adequate rest, the influence of stress on health, the benefits of exercise for the human body and so on<sup>4,11,14</sup>.

### Conclusion

Based on the results of research and discussion in this study, it can be concluded that the description of the behavior of tuberculosis pulmonary disease prevention in general is good category, knowledge of controlling tuberculosis pulmonary disease affects the behavior of tuberculosis pulmonary disease prevention in Makassar, influential knowledge of tuberculosis disease control agents on the behavior of preventing lung tuberculosis in Makassar City, the knowledge of increasing body resistance to tuberculosis has an effect on the behavior of tuberculosis tuberculosis in Makassar City, the variable that greatly influences tuberculosis prevention behavior in Makassar is the knowledge of Tuberculosis disease control., then the knowledge of increasing body resistance to tuberculosis disease, and finally the control knowledge of tuberculosis disease agents.

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